Safety-related Comments
Made During NSLS Safety Stand-Down Meetings
12/2- 12/17/2004

There was considerable discussion at each of the safety stand-down meetings that took place during the BNL 2004 Safety Partnership week. The meetings were not recorded, so these notes represent a best effort to reflect issues that were raised during these meetings. During FY 05, NSLS management will consider these issues and report back to the NSLS community. Many of these issues have already been addressed or are currently being addressed. This list will provide readers with the status of each comment.

NSLS ESH Highlight #37 provides links to the various presentations made at the safety meetings.

If you have additional comments for which you would like a response, please use the e-mail link below:

E-mail **additional comments.**

I. Comments Raised During Departmental Meetings Regarding NSLS Programs		
Comments	**Response**	**Response Point of Contact**
There were numerous comments about the perceived harshness of the disciplinary actions following the electric shock incident and other issues relating to the event. There was concern expressed about the "chilling" effect that such disciplinary action has with regard to reporting of future incidents.	Status: Closed A number of issues were raised in the aftermath of the critique and the subsequent disciplinary actions that have been followed up. Among those, the department has established new procedures for conducting critiques (see LS-PRM-1.1.1 and the Lab has established a new Disciplinary Actions Subject Area associated with ESH issues.	R. Casey

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There is a need for alternates for Work Control Coordinators to ensure work screening during vacations and other absences.	Status: Closed New alternates were added and a new procedure added to NSLS PRM 1.3.6 defining the work screening process when the primary WCC is not available.	A. Boerner
There is a need for training and definition of roles for new WCCs recently added.	Status: Closed Training for new WCCs was held on 3-7-05.	A. Boerner
Work planning should be managed and coordinated by engineering staff and not technical staff.	Status: Closed Since this comment was made during the Safety Stand-down, responsibility for the NSLS Work Planning Program has been re-assigned to the Operations and Engineering Division. The new program manager is Al Boerner, an electrical engineer. Gerry Van Derlaske, who provided very capable and dedicated leadership to this program for the last 4 years, continues as an important member of the work planning team.	A. Boerner
Engineers who are responsible for equipment should review all work plans involving the equipment.	Status: Closed Engineers have been appointed as backup Work Control Coordinators for the supervisors in each of the technical groups. Engineers are also invited to attend Work Planning meetings.	A. Boerner

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Additional discussion is needed regarding call-in of techs off-hours and whether screening of the task is needed by a supervisor.	Status: Closed A Memorandum of Understanding Between NSLS and Plant Engineering has been developed to cover "BNL Site Shift Supervisors responding to [off-hour] calls at LS facilities". For NSLS personnel, Worker Qualification Matrices have been developed to ensure that workers are trained and qualified for specific work activities without the need of formal work planning. They are trained to understand their limitations if the scope of the work changes. This includes reviewing the work with their supervisor/WCC and/or implementing formal work planning. In addition, the need for formal work planning on specific work activities is pre-determined and identified on the Qualification Matrix.	A. Boerner/ M. Buckley

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Personnel designing equipment need to consider instruction manuals to ensure that personnel who assume responsibility for use of equipment at a later time have a clear set of instructions and guidance regarding the device.	Status: Closed Equipment designed and/or assembled at the NSLS may require written instructions and guidance for reference by future users. The individual responsible for the equipment design along with those who maintain it determine the need for documentation and generate the instructions or procedures as required. The person responsible for equipment operation must retain a copy of this material and ensure that personnel using the equipment receive proper instruction and training in its use. A check-list for equipment design review is used and an item has been added to ensure that the need for documentation is evaluated during the design stage.	R. Biscardi/ E. Haas
There was a great deal of interest in the inventory of hazardous equipment. There was a request that we sharpen the focus of the inventory and eliminate listing equipment that technically met the requirement for the inventory, but in fact was really quite conventional.	Status: Closed Additional guidance was provided clarifying which equipment should be included in these lists.	A. Ackerman

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Concern was expressed about the implied liability of personnel who are deemed “responsible” for equipment.	Status: Closed Several meetings were held with engineering staff to clarify the implied liability of a person deemed “responsible” for a piece of equipment. The safety obligation of the “responsible” person is to be knowledgeable of the hazards associated with the equipment and to be capable of defining a safe procedure for placing the equipment in a zero energy state prior to maintenance.	R. Casey

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An NSLS tech asked for definition of the appropriate standard when building an electronics box. He noted that he found no guidance related to electrical wiring in SBMS. "There are several established standards already in existence but none have been chosen as a guideline for wiring at BNL. Should I be wiring to the National Electrical Code, Under Writers Laboratory standards, American National Standards Industry (ANSI), National Electrical Manufacturers Association (NEMA) or any other established standard? Once a standard for BNL and/ or NSLS has been chosen I'd like access to it so that I can comply with this and know that my assemblies meet lab standards."	Status: Closed The standards referenced by the NSLS tech provide good work practices associated with the construction of electrical/electronic equipment. Each has its own merits for ensuring worker safety. All of these standards include much more information than is applicable to the question at hand. Additional guidance for electrical design of research equipment is contained in ES&H Standard 1.5.2, Design Criteria for Electrical Equipment A program with assigned Electrical Equipment Inspectors (EEI's) has recently been instituted at BNL. When this program is fully implemented, all newly constructed electrical/electronic equipment/systems outside range A will be inspected and tagged. This program and its associated guidance will, in part, address the need to consult a specification when wiring a chassis. If an individual is unsure a newly constructed device will pass the required inspection or needs guidance, they should see their supervisor, and then an EEI should be consulted, if necessary. Additional information and guidance regarding the EEI program will be provided in the latter part of calendar year 2005.	R. Biscardi/ E. Haas

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There was a request for more information about the program "Tap-root" used to determine root causes in BNL incidents.	Status: Closed A summary of TapRoot® is available from the company's own web site at: http://www.taproot.com/ In addition, TapRoot® expertise at BNL is available from Ed Sierra, x4080.	N. Gmur
It was requested that the card reader permitting access to the SDL area be re-programmed to allow access only for those personnel who have completed SDL ESH orientation. Currently it allows access for personnel who have only NSLS ESH orientation.	Status: Closed SDL card readers were re-programmed in 1/05 to allow access to only those personnel who have completed SDL access training.	J. Murphy
PRT staff asked for more opportunity to discuss safety and operational issues with NSLS management.	Status: Closed A concerted effort has been made to provide more opportunity to discuss safety and operational issues with the NSLS Associate Chairs. Particular emphasis has been placed on attending the weekly scheduling meetings. In addition, several PRT members were invited to participate in discussions about 70E implementation to help formulate the definition for the NSLS programs. A PRT member is also included in the NSLS ESH Improvement Committee. We will continue to offer the PRTs participation and involvement in development and review of ESH programs,	R. Casey

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PRT staff asked that NSLS provide more support to the general users who have electrical problems with power supplies, etc. They expressed concern about users bringing unsafe equipment with them and the need to inspect it. Several people suggested that there needs to be a way to evaluate "locally designed and fabricated" experimental equipment.	Status: Closed The NSLS project to review non-NRTL rated electrical equipment has been approved and will begin this year. As a part of this project, all existing equipment on the experimental floor that is not NRTL labeled will be inspected by NSLS personnel in coordination with Beamline Contacts. These inspections will take several years to complete. Equipment brought to or designed at BNL will also be covered under this program. Details of the inspection process will be discussed with NSLS staff and users in the first quarter of 2006.	W. R. Casey, R. Biscardi

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PRT staff also expressed concern about users bringing chemicals to the NSLS and then leaving it or wastes when they depart. There was concern that they have now inherited and are responsible for potentially hazardous materials brought by others.	Status: Closed We agree that this can be a problem with some of our visiting users and requires attention. Chemical handling and storage requirements are explained in the PASS system and in the ESH Guidance for the Users & Staff on the Experimental Floor. If a user leaves a chemical behind, the Local Contact may ship that material back to the User at his or her home institution. If this is a recurring issue at your beamline, your best approach is to express your concern to the User while their experiment is in progress. Explain that they are to ship all their materials home when their experiment is over and assure proper disposal of any wastes generated. All hazardous wastes generated at BNL must be disposed at BNL through the BNL Waste Management Facility. The responsibility for waste disposal lies with the waste generator. These requirements are also explained in the PASS system. In support of this requirement, the ESH Specialist is notified by the Operations Coordinator (OpCo) when waste generation is identified on an experiment Safety Approval Form and that experiment is started at the beam line. The ESH Specialist visits the User and explains the NSLS waste disposal procedures.	J. Aloi

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	It is important for the Local Contact to also be aware that wastes will be generated and to reinforce disposal requirements with the visiting users. Should a waste be left behind by a User, the Local Contact and the ESH Specialist will work together to assure proper disposal. When this happens, we should contact the principal investigator and lead experimenter and express our concern that proper procedure was not followed by the research group.	

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PRT staff suggested that the principal investigator submitting a proposal be asked to acknowledge formally that he/she is aware of R2A2s (Roles, Responsibilities, Accountabilities and Authorities) for research teams conducting work on the experimental floor and that he has responsibilities to properly charge his team.	Status: Open R2A2s are already provided to the Principal Investigator and the Lead Experimenter. Including this information in BLOSA training will also be examined.	A. Ackerman
PRT and some NSLS beam line staff expressed concern about responsibility for beam line components. Clearly they see experimental equipment in the hutches as their responsibility, but there was a lot of discussion whether they are responsible for much of the beam line equipment (e.g. ion pumps and associated controllers). It was clear that none saw themselves as responsible for beam line equipment within the accelerator enclosure.	Status: Closed This issue has been resolved through the establishment of PRT and NSLS lists which identify equipment requiring LOTO prior to maintenance and identify the responsible contact person.	R. Casey
One PRT member suggested that every general user needed to meet with a NSLS ESH member upon arrival for reinforcement of NSLS safety expectations.	Status: Closed A good idea, but we lack sufficient staffing to make this commitment. The importance of safety to our general user needs to be continually re-enforced through the available communication channels: SAF review, facility specific and BLOSA training, and day to day interaction with PRT members and NSLS operations and ESH staff.	R. Casey

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PRT staff expressed support for increased labeling of beam line components to emphasize safety related issues and asked for more help from NSLS staff in this effort.	Status: Closed A considerable effort was made in the past six months to label all beam line hazards requiring LOTO prior to maintenance. Guidance for the labeling and funds for acquiring the labels were provided by NSLS staff. In addition, the NSLS Electrical Safety Officer (John Aloi) has led two beam line inspections which have labeled electrical components with voltages greater than 600 V and BNC connectors with voltages greater than 50 V.	R. Casey
PRT staff raised issues regarding the training. One suggestion was made that we seek to provide a succinct reminder of key points for emphasis, including common sense suggestions for operating a beam line safely (e.g. remember that beam line control computers move real equipment and should not be treated/explored like video games.) He offered to work with NSLS staff in developing this list.	Status: Open A list of key safety points is under development and will be discussed with beam line staff prior to distribution.	A. Ackerman/ M.A. Corwin

II. Comments Made About Specific NSLS Conditions (for follow-up by NSLS personnel)		
Comments	**Response**	**Response Point of Contact**
NSLS access:		
'Handicapped Parking' slot should be outlined near the front (south) entrance of building 725 for easy access into the building.	Status: Closed Handicapped parking slots will be installed as part of the combined CFN/NSLS parking lot that is to be constructed opposite NSLS building 725.	G. Van Derlaske
Can the front (south) entrance be improved to facilitate access by handicapped persons?	Status: Closed Automatic (ADA compliant) door openers have been installed for the doors leading into both the Front Lobby and the North Lobby for Building 725.	G. Van Derlaske
The large holly tree in the semi-circular drive in front of bldg. 725 blocks the visibility of a pedestrian to see moving cars coming around the drive, especially when cars are parked along the semi-circular drive's perimeter.	Status: Closed This tree was pruned and visibility of vehicles in all parts of the driveway has been restored.	G. Van Derlaske
Lighting:		
The side door near the main bldg. 725 entrance has no lighting of its own; very dark at night. Lighting along the right hand side of the main bldg. 725 semi-circular drive (west side) is very poor and does not reach sidewalk for access to parked cars. Perhaps spotlights directed out from the side of the building could mitigate this problem.	Status: Closed All relevant outdoor lamps were replaced to provide improved illumination. Surveys were conducted at night; these determined that the lighting eliminated the dark spots.	G. Van Derlaske

II. Comments Made About Specific NSLS Conditions (for follow-up by NSLS personnel)		
Comments	**Response**	**Response Point of Contact**
Training:		
Computer-based training modules might have more impact if they showed the graphic results of injuries and accidents.	Status: Closed Incorporating more work-specific examples, graphics and lessons learned is a main part of our commitment to improving our web-based courses. Material for courses is determined on a course-by-course basis, depending upon the lessons learned and what practical examples may help to relate the material to the workplace for added interest, motivation, and increased retention. For example, in the recent Electrical Safety course revision, coverage of a SLAC accident and the lessons learned from it was included along with pictures of the accident scene. This scene depicts the damage done by an explosion. It's very hard-hitting just seeing the damage and knowing that a severe injury was incurred at this site. So when there are relevant events and lessons learned, they are included in the training for impact.	Beth Schwaner, Head of BNL Training & Qualifications

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	However, though fear can be an effective motivator, adding graphic results of injuries and accidents to training can also have the opposite effect and turn people off to the material. For example several years ago, another electrical safety course included multiple pictures of burn injuries that occurred from unsafe practices. Some people found these pictures to be very motivating and others complained that they were put off and disgusted by their graphic nature. So a balance is needed when covering accident information. If you know of an event or an example that could help to relay a message or need in a training course, please them to training@bnl.gov. Such input could help us with this improvement effort.	
Barriers:		
When placing a physical barrier or tape across a hallway to block access, make sure the barrier/tape goes all the way across, from side-to-side, so people do not try to pass through gaps.	Status: Closed Custodians have been supplied with accordion barriers that go all the way across a hallway.	G. Van Derlaske

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Mirrors:		
Place convex mirrors at the 725C/725D hallway corner and at the end of the 725B hallway near Rich Biscardi's office to allow pedestrians to see who is coming around the far corner.	Status: Closed A survey was conducted of personnel in these areas and who transit these areas. Not enough positive response was received to warrant the installation of the mirrors.	G. Van Derlaske, N. Gmür
Elevator mats:		
Place some sort of grating or mat in front of elevator doors (particularly at the north elevator where there are no carpeted alcoves on the experimental floor or second floor levels) to allow people to wipe their wet/snowy shoes before walking on the waxed floors where they risk slipping and falling.	Status: Closed Mats were placed at main entrances. In addition, boot scrapers were mounted near main doors to facility.	G. Van Derlaske
Helium gas tanks:		
Cover the sixteen threaded rod extensions on the covers of each of the two helium tanks located at the northwest corner of building 725. Someone could injure himself or herself if they inadvertently hit one of the rods.	Status: Closed All rod extensions were covered.	G. Van Derlaske

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Comments	**Response**	**Response Point of Contact**
Power outage:		
A number of people mentioned their concerns about the power outage on Dec. 2 @ ~17:10 hrs. This outage (15-20 seconds) was not long enough for the emergency generator to activate, meaning that offices and hallways were very dark. Most areas in bldg. 725 rely on the generator to power emergency lighting; battery powered lights are not universally distributed. This issue will be examined by the NSLS.	Status: Closed 1. Locations of emergency powered lights have been resurveyed and drawings have been updated. 2. Lights on emergency power have been labeled for easy identification. 3. Fluorescent tape is being affixed in stairwells to show locations of treads, door knobs and handrails in a blackout. 4. An emergency light ballast [with battery back-up] has been tested for use with fluorescent fixtures; this will provide ~2 hours of light in case the diesel generator fails. Fifty of these units have been deployed throughout building 725.	A. Boerner/ N. Gmur

III. Comments Made Relating to Lab Programs
These comments have been added to BNL's ESH/Q list available at http://intranet.bnl.gov/ESHQ/Safety_Partnership_Week.asp and will be responded to through the responsible Lab program manager.
Comments
Bicycle traffic rules of the road:
These should be advertised on a more regular basis; many bicyclists are not stopping or signaling and are riding on the wrong side of the road. More rigorous enforcement was also suggested.
When persons register for BNL bicycles, they should be given a sheet of "Bicycle Rules of the Road" telling them how to operate a bike on BNL and Long Island roads.
In-line skaters:
Skaters should be encouraged to wear helmets.
Bike lanes:
Paint lanes for bikers, joggers, walkers, etc. on major BNL roads so there is a clear separation between them and the cars/trucks.
General vehicular traffic:
Observe continued speeding on a) long straight road to the baseball fields [Brookhaven Ave.], b) long straight road to RHIC [Railroad Str.], c) rear road to the north gate [Upton Rd.], d) trucks along rear road to the warehouses [Princeton Ave.], e) after work on a variety of roads after dark; schedule more patrols in these areas and place the digital speed displays there.
Improved driver consideration exists at cross walks.
Stop signs are still not being observed by many drivers.
When driving north on Rochester Street going past the gas station, the evergreen tree branches on the right side visually block the view of the upcoming STOP sign at the intersection of Rochester and Bell; have the lower branches removed on that tree.

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Comments

Cross-walks:

As a driver at night, these are difficult to see, even with the signs; lights or reflective strips would improve visibility.4

IV. Safety Reminders for NSLS Staff

Office issues:

- Place a timer on a laminator so it automatically shuts off after ~60 minutes and does not overheat.
- Make sure your coffee pot has a timer and/or a high temp shut off.
- Keep shelving clear of over-hanging stored materials and equipment.
- In multi-desk office rooms, keep chairs and file shelves pulled in so people do not run into them.
- Portable electric heaters must be turned off at the end of the day
- Plastic cable ties are useful for coiling power and signal cables to avoid trip hazards.
- Use the Outlook calendar to remind you daily to turn off the laminator, coffee pot, portable electric heater, etc.

Useful links are available:

- for Office Ergonomics
  https://sbms.bnl.gov/standard/1p/1p00t011.htm;
  http://www.bnl.gov/esh/shsd/ih/IH_Program_Areas_Ergonomics.htm

- for Office Heaters
  http://www.bnl.gov/emergencyservices/FP/FAQ/heaters.htm

- for Water Coolers
  http://www.bnl.gov/esh/shsd/ih/PDF/Bottled_Water_Hygiene_Procedure.pdf

IV. Safety Reminders for NSLS Staff

Lanyards:

- Make sure you use the ones with the plastic releases; they work much better than the rubber tubing type. Always place the release to the side (for quick action) and not against the back of your neck.

Spills:

- People should be alerted to clean up their own water or coffee spills (spills in hallways are a common problem). It is not up to the custodian. The next person along may slip on the liquid and hurt themselves.

Home safety tips:

- Remember to provide child-proof locks on refrigerator doors.
- Preventing a child from accessing a bathroom medicine cabinet may be as easy as changing the direction in which the cabinet door opens.
- Wear safety glasses when mowing the lawn.